

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
20 June 2002 (20.06.2002)

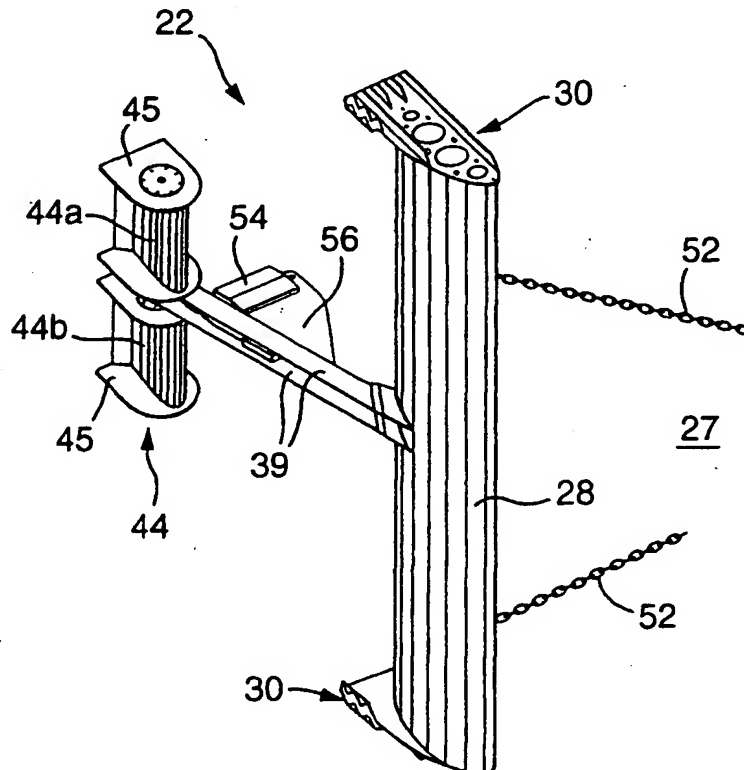
PCT

(10) International Publication Number  
**WO 02/47968 A1**

- (51) International Patent Classification<sup>7</sup>: **B63B 21/66** (71) Applicant (*for FR only*): **SERVICES PETROLIERS SCHLUMBERGER [FR/FR]**; 42, rue Saint-Dominique, F-75007 Paris (FR).
- (21) International Application Number: **PCT/IB01/02499**
- (22) International Filing Date:  
12 December 2001 (12.12.2001) (72) Inventors; and  
(75) Inventors/Applicants (*for US only*): **KESKES, Emmanuel [FR/FR]**; 20, rue Prefet Bonnefoy, F-44000 Nantes (FR). **SAINT-PERE, Philippe [FR/FR]**; Srpc clamart, 1, rue Henri Becquerel, BP 202, F-Clamart (FR).
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
0030743.9 16 December 2000 (16.12.2000) GB (74) Agent: **STOOL, Brian, D.**; WesternGeco Limited, Schlumberger House, Buckingham Gate, Gatwick, West Sussex RH6 0NZ (GB).
- (71) Applicant (*for all designated States except CA, FR, US*): **WESTERN GECO SEISMIC HOLDINGS LIMITED** [—/—]; Citco Building, P.O. Box 662, Road Town Tortola, British Virgin Islands (VG). (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
- (71) Applicant (*for CA only*): **SCHLUMBERGER CANADA LIMITED [CA/CA]**; 24th Floor, Monenco Place, 801 6th Avenue, SW, Calgary, Alberta T2P 3W2 (CA).

[Continued on next page]

(54) Title: DEFLECTOR DEVICES



(57) Abstract: A deflector device (22) for use with a tow line between a seismic survey vessel and a tow, in particular a seismic streamer or streamer array, in the water behind the vessel comprises a vertically oriented wing-shaped body (28) shaped to produce in use a sideways force which urges the tow line laterally with respect to the direction of movement of the towing vessel. The wing-shaped body (28) includes one or more buoyancy elements, and a rearwardly extending boom (32). A pivotable control surface (54) extends sideways from the boom (32), and is shaped to produce in use a force having a substantial vertical component. The angle of the control surface is remotely controllable, in order to control the depth of the deflector device.

WO 02/47968 A1